

CLAIMS

What is claimed is:

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A method of initiating a handoff between a serving base station and a target base station in a CDMA communication system having a plurality of base stations in communication with at least one mobile station, wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station, and wherein the serving base station and the target base station operate in accordance to different generations of CDMA systems, comprising the steps of:

- 5 a) obtaining a first parameter, E_b/N_o , associated with the serving base station;
- 10 b) obtaining a second parameter, E_b/N_t , associated with the target base station;
- 15 c) determining if the first parameter is less than or equal to the sum of the second parameter and an offset;
- d) returning to step (a) if the first parameter is not less than or equal to the sum of the second parameter and the offset; and
- e) initiating a reverse link handoff between the serving and target base stations if the first parameter is less than or equal to the sum of the second parameter and the offset.

2. The method of initiating a handoff of Claim 1, wherein the step (b) further comprises obtaining a target base station E_c/I_o value associated with the target base station.

3. The method of initiating a handoff of Claim 2, wherein the step (c) of determining if the first parameter is less than or equal to the sum of the second parameter and an offset comprises the sub-steps of:

- 5 i) determining whether the target base station E_c/I_o value is greater than a T_{Add} parameter;
- 10 ii) returning to step (a) of Claim 1 if the target base station E_c/I_o value is not greater than the T_{Add} parameter;
- 15 iii) sending a PSMM to the serving base station and adding the target base station to an active set if the target base station E_c/I_o value is greater than the T_{Add} parameter;
- 20 iv) determining whether the serving base station transmitted an intergenerational handoff direction message to the mobile station;
- 15 v) returning to step (a) of Claim 1 if the serving base station did not transmit an intergenerational handoff direction message to the mobile station;
- 20 vi) proceeding to step (d) of Claim 1 if the serving base station transmitted an intergenerational handoff direction message to the mobile station;
- vii) obtaining the first parameter from the serving base station and the second parameter from the target base station; and
- viii) determining if the first parameter is less than or equal to the sum of the second parameter and the offset.

4. The method of initiating a handoff of Claim 1, wherein the offset is zero.

5. The method of initiating a handoff of Claim 1, wherein the offset is based on a Frame Error Rate (FER) parameter.

6. The method of initiating a handoff of Claim 1, wherein the offset is based on a Quality of Service (QoS) parameter.



7. The method of initiating a handoff of Claim 1, wherein the step (e) of initiating a reverse link handoff is autonomously performed by the mobile station.
8. The method of initiating a handoff of Claim 1, wherein the handoff is an intergenerational soft handoff comprising a forward link soft handoff and a reverse link hard handoff.
9. The method of initiating a handoff of Claim 8, wherein the handoff is autonomously performed by the mobile station.
10. The method of initiating a handoff of Claim 1, wherein the handoff is an intergenerational hard handoff comprising a forward link hard handoff and a reverse link hard handoff.
11. The method of initiating a handoff of Claim 10, wherein the handoff is autonomously performed by the mobile station.

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12. An apparatus for initiating a handoff between a serving base station and a target base station in a CDMA communication system having a plurality of base stations in communication with at least one mobile station, wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station, and wherein the serving base station and the target base station operate in accordance to different generations of CDMA systems, comprising:

a) means for sending a PSMM to the serving base station and adding the target base station to an active set when a first parameter, E_c/I_o , associated with the target base station is greater than a T_{Add} threshold parameter; and

b) means for initiating a reverse link intergenerational hard handoff, wherein the hard handoff initiation means is responsive to the serving base station, and wherein the hard handoff initiation means initiates a reverse link intergenerational hard handoff when the serving base station transmits an intergenerational handoff direction message to the mobile station and when a second parameter, E_b/N_t , associated with the serving base station is less than or equal to a sum of a third parameter, E_b/N_t , associated with the target base station and an offset.

13. The apparatus of Claim 12, wherein the offset is zero.

14. The apparatus of Claim 12, wherein the offset is a difference between the third parameter, E_b/N_t , of the target base station, and the second parameter, E_b/N_t , of the serving base station.

15. The apparatus of Claim 12, wherein the offset is based on a Frame Error Rate (FER) parameter.

16. The apparatus of Claim 15, wherein the FER parameter comprises a 1% FER.

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- 17. The apparatus of Claim 12, wherein the offset is based on a Quality of Service (QoS) parameter.
- 18. The apparatus of Claim 12, wherein the handoff is autonomously performed by the mobile station.
- 19. The apparatus of Claim 12, wherein the handoff is an intergenerational soft handoff comprising a forward link soft handoff and a reverse link hard handoff.
- 20. The apparatus of Claim 12, wherein the handoff is an intergenerational hard handoff comprising a forward link hard handoff and a reverse link hard handoff.

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21. A computer program executable on a general purpose computing device, wherein the program is capable of initiating a reverse link handoff in a CDMA communication system having a plurality of base stations in communication with at least one mobile station, wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station, and wherein the serving base station and the target base station operate in accordance to different generations of CDMA systems, comprising:

- a) a first set of instructions for monitoring a first parameter obtained from the serving base station, wherein the first parameter comprises the value of E_b/N_t that is associated with the serving base station;
- b) a second set of instructions for monitoring a second parameter obtained from the target base station, wherein the second parameter comprises the value E_b/N_t that is associated with the target base station;
- c) a third set of instructions for determining if the first parameter is less than or equal to the sum of the second parameter and an offset; and
- d) a fourth set of instructions for initiating a reverse link intergenerational hard handoff between the serving and target base stations if the first parameter is less than or equal to the sum of the second parameter and the offset.

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